KOYT KARDLEAD
Architectural & Ornamental
LEADWORK

National Lead Company
111 Broadway N.Y.

HOYT HARDLEAD

Architectural & Ornamental

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The true work of art is but a shadow of the divine perfection
—Michelangelo

FOREWORD

THE use of lead for building purposes is not new. Many of the world's architectural masterpieces enriched by its use stand today, after centuries of wear, mute evidence of the permanence and beauty of lead.

Until the introduction of *HOYT HARDLEAD* the only lead available was soft lead. While possessing many worthy qualities soft lead has the disadvantage of low physical strength which renders its use for general roofing purposes impractical.

HOYT HARDLEAD has a much greater tensile strength than soft lead which permits its use in comparatively thin sheets making it thoroughly practical and adaptable to modern building construction.

HOYT HARDLEAD can be stamped, formed or cast in any shape desired.

HOYT HARDLEAD when exposed to the atmosphere takes on a soft gray, non-staining patina that brings out the true value of adjacent materials and gives a balance to these materials that can not be obtained with other metals. It will lend dignity and character to any structure where permanence and beauty is desired.

HOYT HARDLEAD can be used for all building purposes where it is practical to use sheet metal.

Hoyt Hardlead
Partial List of Installations

New York Life Insurance Co. Building	New York, N. Y.	Cass Gilbert New York, N. Y.
Prudential Life Insurance Co. Building	Newark, N. J.	
West Virginia State Capitol	Charleston, W. Va.	
James Scott Memorial	Belle Isle, Detroit, Mich.	
School of Business, Columbia University	New York, N. Y.	McKim, Mead & White New York, N. Y.
Harvard School of Business	Cambridge, Mass.	
Burlington City Hall	Burlington, Vt.	
The White House	Washington, D. C.	
Kendrick House, Vassar College	Poughkeepsie, N. Y.	York & Sawyer New York, N. Y.
First National Bank	Utica, N. Y.	
Federal Reserve Bank	New York, N. Y.	
Bowery Savings Bank	New York, N. Y.	
Chicago Tribune Tower	Chicago, Ill.	John Mead Howells Raymond M. Hood New York, N. Y.
Medill McCormick Mausoleum	Rockford, Ill.	
Bethany Union Church	Chicago, Ill.	Raymond M. Hood
American Glanzstoff Plant	Elizabethton, Tenn.	Lockwood Greene Engineers, Inc. New York, N. Y.
American Enka Plant	Enka, N. C.	
Vincent Astor Residence	Port Washington, L. I.	Delano & Aldrich New York, N. Y.
Harrison Williams Estate	Bayville, L. I.	
Efrem Zimbalist Residence	New York, N. Y.	Grosvenor Atterbury New York, N. Y.
Mrs. Jean Schmidlapp Residence	Cincinnati, Ohio	
Charles Pratt Residence	Glen Cove, L. I.	Peabody, Wilson & Brown New York, N. Y.
Freeport Municipal Building	Freeport, L. I.	
Tiger Inn	Princeton, N. J.	Aymar Embury, 2nd New York, N. Y.
Congregational Church	Kalamazoo, Mich.	
Miss Anne Morgan Residence	New York, N. Y.	Mott B. Schmidt New York, N. Y.
Princess Serge Obelensky Residence	Rhinebeck, N. Y.	

Lafayette College	Easton, Pa.	
Royal Bermudian Hotel	Hamilton, Bermuda	Warren & Wetmore New York, N. Y.
Greenwood Cemetery Gate House	Brooklyn, N. Y.	
Scarsdale Telephone Building	Scarsdale, N. Y.	
Mamaroneck Telephone Building	Mamaroneck, N. Y.	Voorhees, Gmelin & Walker New York, N. Y.
Albany Telephone Building	Albany, N. Y.	
Chesapeake & Potomac Telephone Building	Richmond, Va.	
Moses Taylor Residence	Portsmouth, R. I.	
Marshall Field, 3rd Estate	Lloyd's Neck, L. I.	John Russell Pope New York, N. Y.
J. S. Frelinghuysen Residence	Far Hills, N. J.	
Geraldyn L. Redmond Residence	Brookfield, L. I.	James W. O'Connor New York, N. Y.
Lady of Cenacle Church	Jamaica, L. I.	
Felix Warburg Residence	White Plains, N. Y.	Arnold W. Brunner New York, N. Y.
John V. Heyniger Residence	Corning, N. Y.	Howard Greenley New York, N. Y.
Cameron Morrison Residence	Charlotte, N. C.	H. T. Lindeberg New York, N. Y.
A. B. Dick, Jr. Residence	Lake Forrest, Ill.	
Nicholas F. Brady Residence	Roslyn, L. I.	J. Y. Rippin New York, N. Y.
Downtown Athletic Club	New York, N. Y.	Starrett & Van Vleck New York, N. Y.
Abraham & Straus Department Store	Brooklyn, N. Y.	
Robert Law Residence and Garage	Port Chester, N. Y.	Dwight James Baum New York, N. Y.
Kings County Hospital	Brooklyn, N. Y.	Leroy P. Ward New York, N. Y.
Christ Church	Fitchburg, Mass.	Hobart Upjohn New York, N. Y.
Salem Academy	Winston-Salem, N. C.	
First Presbyterian Church	Greensboro, N. C.	
C. P. Wilson Residence	Mill Neck, L. I.	Hart & Shape New York, N. Y.
E. F. Hutton Residence	Wheatly Hills, L. I.	
Carl Weeks Residence	Des Moines, Iowa	Rasmussen & Wayland New York, N. Y.
Samuel A. Katz Estate	Centenary, N. Y.	H. A. Jacobs New York, N. Y.

Addition to Pelham High School	Pelham, N. Y.	Tooker & Marsh New York, N. Y.
Bear Mountain Bridge Gate Toll	Bear Mountain, N. Y.	
Coles High School	Glen Cove, L. I.	Knappe & Morris New York, N. Y.
Hawthorne School	Hawthorne, N. Y.	
Mrs. R. Burnham Moffat Residence	Bernardsville, N. J.	Godwin, Thompson & Patterson New York, N. Y.
F. H. Hirschland Residence	White Plains, N. Y.	F. E. Newman New York, N. Y.
J. A. Hartford Residence	Valhalla, N. Y.	Mann & MacNeille New York, N. Y.
Hiram Bloomingdale Residence	Great Neck, L. I.	
St. Thos. of Aquinas Church	New York, N. Y.	Robert J. Reilly New York, N. Y.
My Lady of Angels School	Brooklyn, N. Y.	
J. L. Hudson Building	Detroit Mich.	Smith, Hinchman & Grylls Detroit, Mich.
Michigan Bell Telephone Co., Lenox Exchange	Detroit, Mich.	
Penobscot Building	Detroit, Mich.	
Hal Smith Residence	Detroit, Mich.	
Alfred G. Wilson Residence	Rochester, Mich.	
Henry Ford Museum	Dearborn, Mich.	R. O. Derrick Detroit, Mich.
Thomas H. Simpson Memorial Institute for Medical Research	Ann Arbor, Mich.	
Senator James Couzen's Residence	Bloomfield Hills, Mich.	Albert Kahn Detroit, Mich.
Ford Motor Company Building	Detroit, Mich.	
Packard Motor Company Building	Detroit, Mich.	
W. E. Scripps Residence	Detroit, Mich.	Clarence E. Day Detroit, Mich.
American Insurance Union Building	Columbus, Ohio	C. Howard Crane Detroit, Mich.
John G. Shedd Aquarium	Chicago, Ill.	Graham, Anderson, Probst & White Chicago, Ill.
Crane Co. Plant Buildings	Chicago, Ill.	
Hibbard Spencer Bartlett Building	Chicago, Ill.	
Mausoleum	Kansas City, Mo.	Sidney Lovell Chicago, Ill.

Oak Grove Mausoleum	St. Louis, Mo.	T. P. Barnett Co. St. Louis, Mo. Sidney Lovell Associate Architect Chicago, Ill.
Quigley Theological Seminary	Chicago, Ill.	Jos. McCarthy Chicago, Ill.
Archdiocesan Seminary Chapel, St. Mary's-on-the-Lake	Mundelein, Ill.	
Chemistry Building St. Olaf's College	Northfield, Minn.	Coolidge & Hodgdon Chicago, Ill.
University of Chicago	Chicago, Ill.	
Dr. Emil Boeckman Residence	Dellwood, Minn.	Robert Work & David Adler Chicago, Ill.
R. P. Crane, Jr., Residence	Ipswich, Mass.	
American Bankers Ins. Co. Building	Chicago, Ill.	Childs & Smith Chicago, Ill.
First National Bank & Trust Co.	Hamilton, Ohio	
John N. Willys Residence	Toledo, Ohio	Mills, Rhines, Bellman & Nordhoff Toledo, Ohio
G. R. Ford Residence	Toledo, Ohio	
Clement O. Miniger Residence	Toledo, Ohio	Gerow, Conklin & Hobbs Toledo, Ohio
Julius Fleischmann Residence	Allandale, Ohio	Stanley Matthews Cincinnati, Ohio
Indiana World War Memorial	Indianapolis, Ind.	Walker & Weeks Cleveland, Ohio
E. W. Marland Estate	Ponca City, Okla.	John Duncan Forsyth Ponca City, Okla.
Lockhart Dormitory Princeton University	Princeton, N. J.	Claude Z. Klauder Philadelphia, Pa.
Drexel Building	Philadelphia, Pa.	
Reynolds Presbyterian Church	Winston-Salem, N. C.	Charles Barton Keen Philadelphia, Pa.
Aronomink Golf Club	Newton Square, Pa.	
W. A. & Margaret Coulter Residence	Greensburg, Pa.	Karcher & Smith Philadelphia, Pa.
F. E. Dixon Residence	Elkins Park, Pa.	Horace Trumbauer Philadelphia, Pa.
Viscose Co. Plant	Marcus Hook, Pa.	Ballinger Co. Philadelphia, Pa.
Viscose Co. Plant	Roanoke, Va.	
Viscose Co. Plant	Parkersburg, W. Va.	
Viscose Co. Plant	Lewistown, Pa.	

Longue Vue Club	Pittsburgh, Pa.	Janssen & Cocken Pittsburgh, Pa.
Edward Kauffman Residence	Pittsburgh, Pa.	
Delaware & Atlantic Tel. Co. Building	Princeton, N. J.	John T. Windrim Philadelphia, Pa.
Ellis Cottages		
Ellis College	Philadelphia, Pa.	
Girard College	Philadelphia, Pa.	
Gustav Oberlander Residence	Reading, Pa.	Richter & Eiler Reading, Pa.
Reading Hospital	Reading, Pa.	
U. S. Post Office Building	Tullahoma, Tenn.	Supervising Architect Washington, D. C.
U. S. Veteran's Hospital Recreation Building	Tuskogee, Ala.	
U. S. Post Office Building	Beaver Falls, Pa.	
Auditor's Building	Washington, D. C.	
U. S. Post Office & Custom House	Oswego, N. Y.	
U. S. Post Office Building	New Philadelphia, Ohio	
National Geographic Society Building	Washington, D. C.	Arthur B. Heaton Washington, D. C.
Washington Loan & Trust Co. Building	Washington, D. C.	
Southern Railway Office Building	Washington, D. C.	Waddy B. Wood Washington, D. C.
Potomac Electric Power Building	Washington, D. C.	
Baltimore City College	Baltimore, Md.	Buckler & Fenhagen Baltimore, Md.
Greenmount Mausoleum	Baltimore, Md.	
William Leonard Residence	Guilford, Md.	
Chemical Laboratory Hamilton College	Clinton, N. Y.	Bagg & Newkirk Utica, N. Y.
Utica Golf Club	Utica, N. Y.	
Syracuse Savings Bank	Syracuse, N. Y.	Melvin L. King Syracuse, N. Y.
George Plimpton Residence	Buffalo, N. Y.	E. B. Green & Sons Buffalo, N. Y.
Mrs. G. M. G. Forman Residence	Buffalo, N. Y.	
Pruyn Library Addition	Albany, N. Y.	Marcus T. Reynolds Albany, N. Y.
Stephen C. Clark Residence	Cooperstown, N. Y.	
Harold Seaman Residence	Milwaukee, Wis.	Fitzhugh Scott Milwaukee, Wis.

Sacred Heart Church	Pittsburgh, Pa.	Carlton Strong Pittsburgh, Pa.
St. Paul's Presbytery	Pittsburgh, Pa.	
Immaculate Conception Church	Washington, Pa.	William M. Burke Carlton Strong Associate Architect Pittsburgh, Pa.
Kearny High School	Kearny, N. J.	Guilbert & Betelle Newark, N. J.
Congoleum-Nairn Bldg.	Kearny, N. J.	
Central High School	Newark, N. J.	
Essex County Hall of Records	Newark, N. J.	
Newark School of Fine & Industrial Arts	Newark, N. J.	
Essex County Court House	Newark, N. J.	
Ironbound Trust Co. Building	Newark, N. J.	
Chapel—Princeton University	Princeton, N. J.	Cram & Ferguson Boston, Mass.
Church of the Sacred Heart	Jersey City, N. J.	
Baptistry—Cathedral of St. John the Divine	New York, N. Y.	
St. George's Chapel	Newport, R. I.	
First Presbyterian Church	Utica, N. Y.	Cram & Ferguson Boston, Mass. Rushmer & Jennison Utica, N. Y. Associates
John Hays Hammond Estate	Gloucester, Mass.	Frohman, Robb & Little Boston, Mass.
National Cathedral	Mt. St. Albans, Washington, D. C.	
St. Gabriel's Church	Washington, D. C.	Maginnis & Walsh Boston, Mass.
Immaculate Conception Church	Hartford, Conn.	
Our Lady of Sorrows Church	South Orange, N. J.	
Shrine Chapel, Nazareth Hall	St. Paul, Minn.	
Lawrence Hemmenway Residence	Canton, Mass.	Strickland, Blodgett & Law Boston, Mass.
J. L. Wilmsen Residence	Rydal, Pa.	
Rhode Island School of Design	Providence, R. I.	W. T. Aldrich Boston, Mass.
Barnes Newberry Residence	Naragansett, R. I.	

MANSARD ROOF—DORMER ROOFS—FINIALS—CRESTINGS—PENTHOUSES—FLASHINGS
Prudential Life Insurance Co. Building, Newark, N. J.
Cass Gilbert, Architect, New York, N. Y.

MANSARD ROOF—DORMER ROOFS—FINIALS—CRESTINGS
Prudential Life Insurance Co. Building, Newark, N. J.
Cass Gilbert, Architect, New York, N. Y.

CRESTING—FINIAL
Prudential Life Insurance Co. Building, Newark, N. J.
Cass Gilbert, Architect, New York, N. Y.

PARAPET—CORNICE—PANELS—MULLIONS—SHIELD
Bank Street Bridge, Prudential Life Insurance Building, Newark, N. J.
Cass Gilbert, Architect, New York, N. Y.

SPANDRELS

Architecturally and economically there are many advantages in the use of HOYT HARDLEAD Spandrels.

It is possible to obtain in HOYT HARDLEAD effects that cannot be duplicated in other materials which in contrast present an extreme severity of line. Softness of line and low relief are characteristics of stamped HOYT HARDLEAD.

The soft gray color of HOYT HARDLEAD is uniform and permanent.

Unlike other metals, HOYT HARDLEAD Spandrels require no painting nor other maintenance and do not stain adjacent masonry.

SPANDRELS

SPANDRELS—GUTTER LININGS—COPING FLASHINGS
Southern Railway Office Building, Washington, D. C.
Waddy B. Wood, Architect, Washington, D. C.

HOYT HARDLEAD

INSTALLATIONS

Plate No. 6

SPANDRELS

Abraham & Strauss Department Store, Brooklyn, N. Y.
Starrett & Van Vleck, Architects, New York, N. Y.

TRIBUNE TOWER, CHICAGO, ILL.
John Mead Howells—Raymond M. Hood, Architects, New York City

SPANDRELS

First National Bank & Trust Co., Hamilton, Ohio
Childs & Smith, Architects, Chicago, Illinois

SPANDRELS

MacLean Publishing Company, Toronto, Canada.
Schultze & Weaver, Architects, New York, N. Y.
Murray Brown, Associate Architect, Toronto, Canada.

SPANDRELS

American Bankers' Building, Chicago, Ill.
Childs & Smith, Architects, Chicago, Ill.

SPANDRELS

SPANDRELS

Downtown Athletic Club, New York, N. Y.
Starrett & Van Vleck, Architects, New York, N. Y.

SPANDRELS
Withers Memorial Library, Bloomington, Ill.
Associates of A. L. Pillsbury, Architects, Bloomington, Ill.

SPANDRELS
Michigan Bell Telephone Co. Building, Detroit, Mich.
Smith, Hinchman and Grylls, Architects, Detroit, Mich.

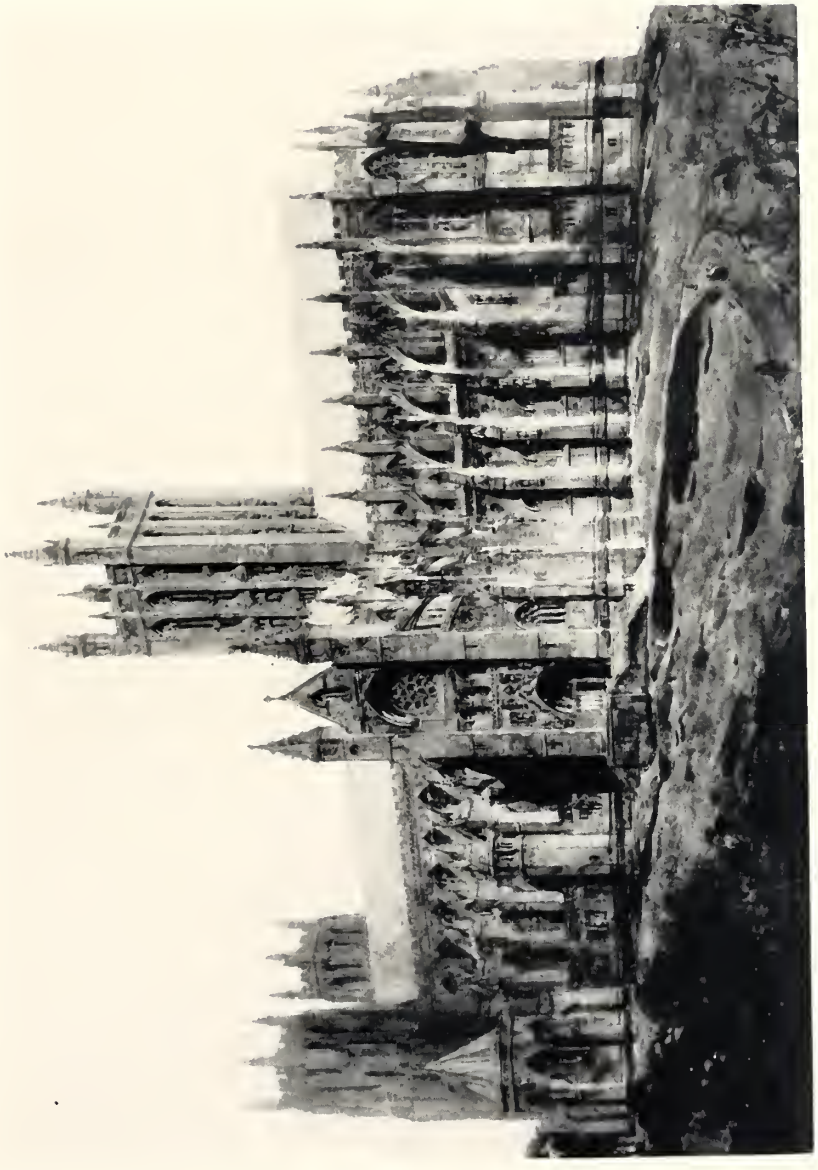
SPANDRELS
Centralia High School, Centralia, Ill.
Associates of A. L. Pillsbury, Architects, Bloomington, Ill.

STATUARY—SPIRE
Quigley Memorial Seminary, Chicago, Ill.
J. W. McCarthy, Architect, Chicago, Ill.
Gustave E. Steinback, Associate Architect, New York, N. Y.

HOYT HARDLEAD

INSTALLATIONS

Plate No. 15



ROOF—RAIN-WATER PIPE-HEADS—PIPE—BANDS—GUTTER
National Cathedral, Mount St. Albans, Washington, D. C.
Frohman, Robb & Little, Architects, Boston, Mass.

HOYT HARDLEAD

INSTALLATIONS

Plate No. 16

ROOF—RAIN-WATER PIPE-HEADS—PIPE—BANDS—GUTTER
National Cathedral, Mount St. Albans, Washington, D. C.
Frohman, Robb & Little, Architects, Boston, Mass.

HOYT HARDLEAD

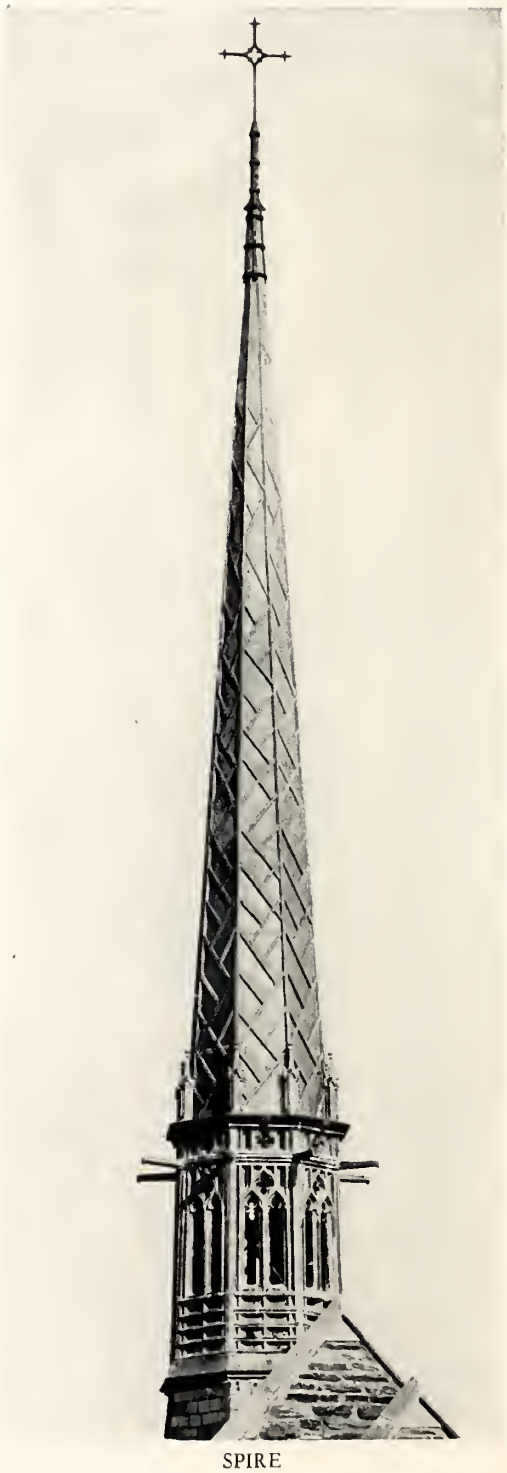
INSTALLATIONS

Plate No. 17

ROOF—RAIN-WATER PIPE-HEADS—PIPE—BANDS—GUTTER
National Cathedral, Mount St. Albans, Washington, D. C.
Frohman, Robb & Little, Architects, Boston, Mass.

ROOFS—TOWER DOME
Princeton University Chapel, Princeton, N. J.
Cram and Ferguson, Architects, Boston, Mass.

RAIN-WATER PIPE-HEADS—PIPE—BANDS—GUTTER
Princeton University Chapel, Princeton, N. J.
Cram and Ferguson, Architects, Boston, Mass.



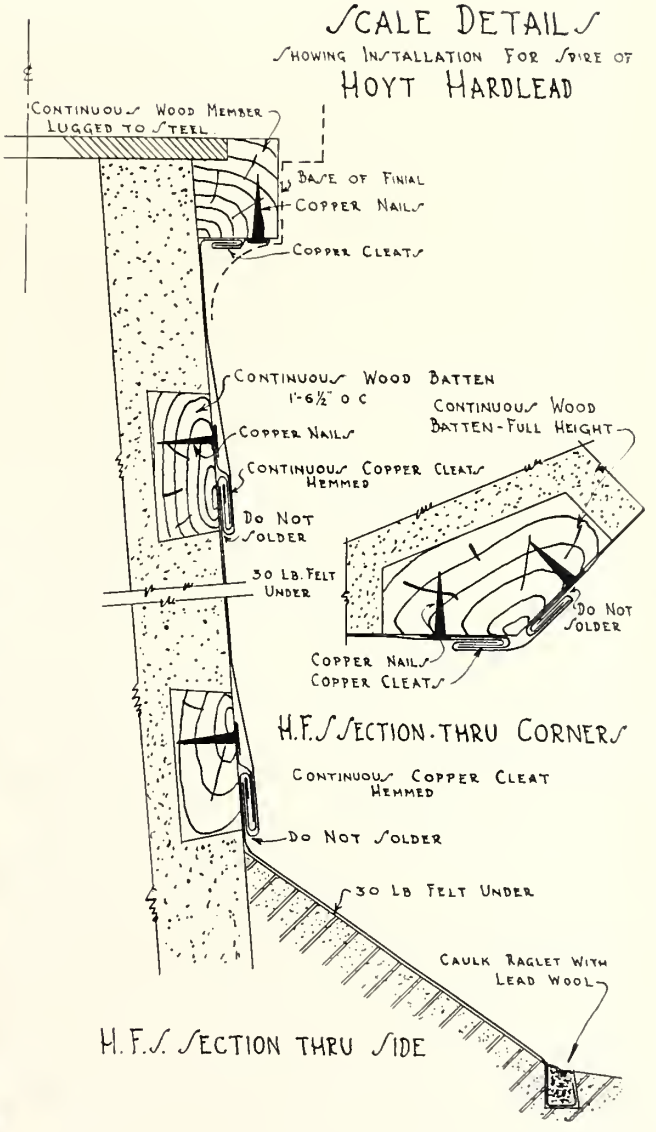
SPIRE
First Presbyterian Church, Ardmore, Pennsylvania
Thomas, Martin and Kirkpatrick, Architects, Philadelphia, Pa.

ROOF—RAIN-WATER PIPE-HEADS—PIPE—BANDS—GUTTER
Church of the Sacred Heart, East Liberty, Pa.
Carlton Strong, Architect, Pittsburgh, Pa.

RAIN-WATER PIPE-HEADS—PIPE—BANDS—GUTTER
Church of the Sacred Heart, East Liberty, Pa.
Carlton Strong, Architect, Pittsburgh, Pa.

ROOFS—SPIRE
Church of the Sacred Heart, Jersey City, N. J.
Cram and Ferguson, Architects, Boston, Mass.

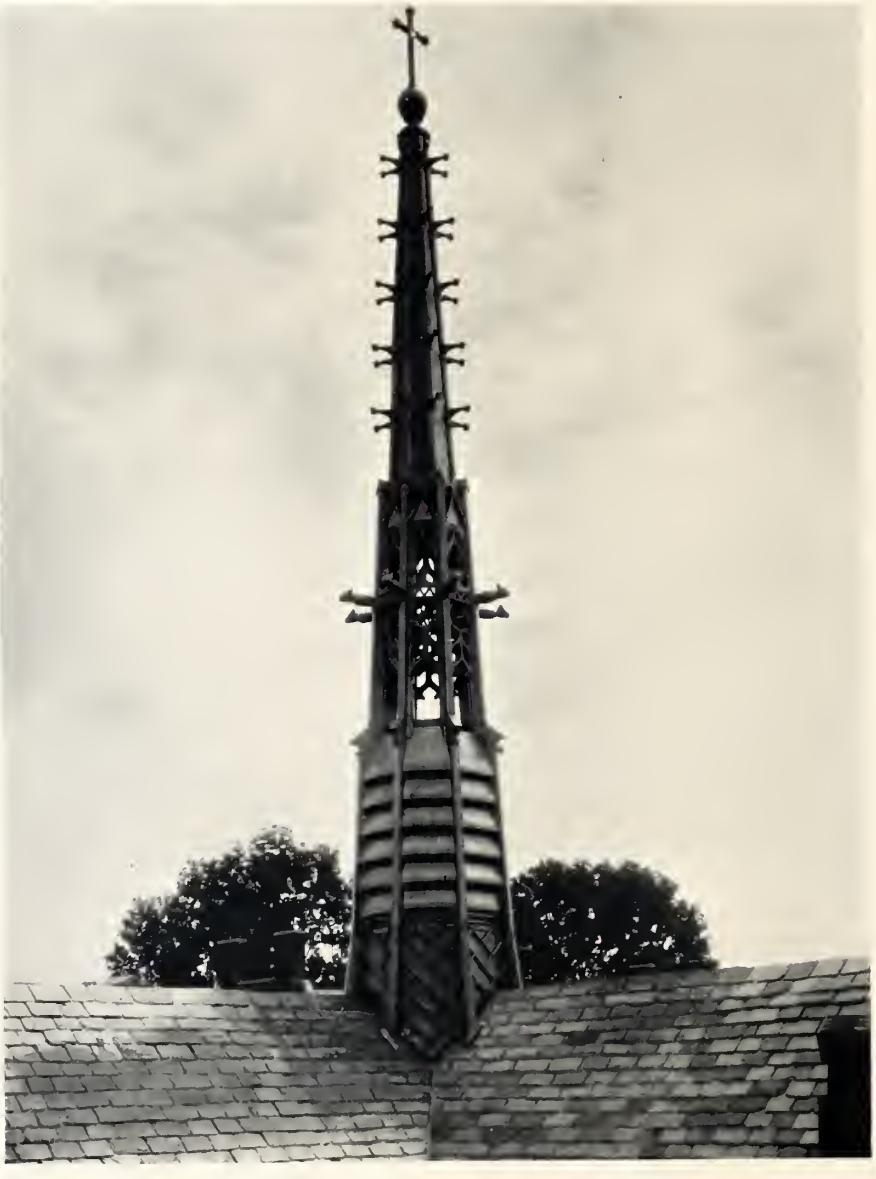
ROOF—FINIAL—GUTTER—FASCIA
Baptistry—Cathedral of St. John the Divine, New York, N. Y.
Cram and Ferguson, Architects, Boston, Mass.



SPIRE
St. Mary's-on-the-Lake Seminary, Mundelein, Ill.
J. W. McCarthy, Architect, Chicago, Ill.

SPIRE
First Presbyterian Church, Utica, N. Y.
Cram and Ferguson, Architects, Boston, Mass.
Rushmer and Jennison, Associate Architects, Utica, N. Y.

SPIRE
New York Avenue Presbyterian Church, Washington, D. C.
Arthur B. Heaton, Architect, Washington, D. C.



SPIRE
St. Madeleine Sophie's School, Philadelphia, Pa.
Henry D. Dagit & Sons, Architects, Philadelphia, Pa.

RAIN-WATER PIPE HEADS—PIPE—BANDS—GUTTER—CROSS—FINIAL
AND ORNAMENTAL CRESTING
Shrine Chapel at Nazareth Hall, Lake Johanna, St. Paul, Minn.
Maginnis & Walsh, Architects, Boston, Mass.

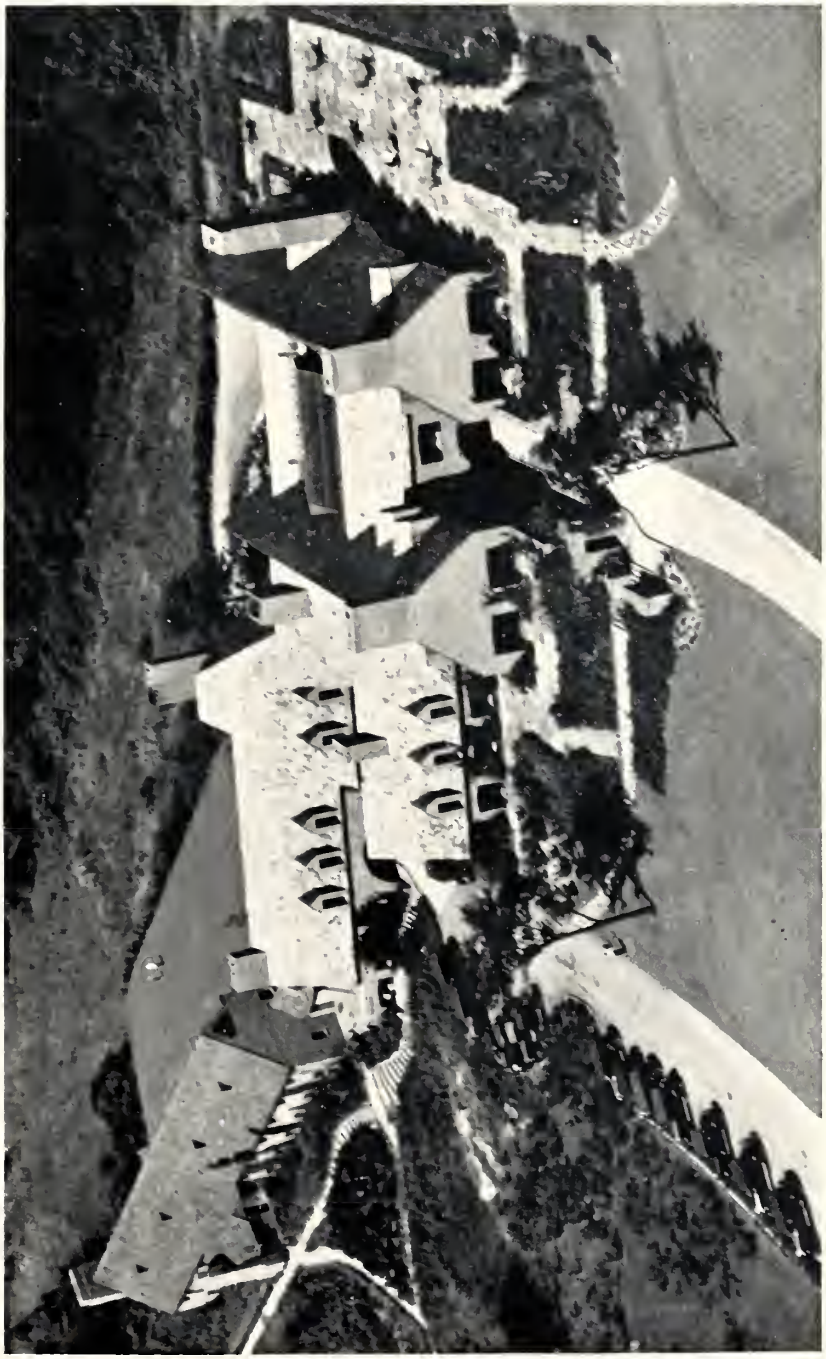
SPECIAL RAIN-WATER PIPE-HEADS—PIPE—GUTTER
St. George Chapel, Newport, R. I.
Cram & Ferguson, Architects, Boston, Mass.

STATUARY
Howard Henry and Foulke Dormitory, Princeton University
Zantzinger, Borie and Medary, Architects, Philadelphia, Pa.
A. Stirling Calder, Sculptor, New York, N. Y.

FINIAL—CRESTINGS—FLASHINGS
Shedd Aquarium, Chicago, Ill.
Graham, Anderson, Probst & White, Architects, Chicago, Ill.

STEPPED ROOF COVERING
Indiana World War Memorial, Indianapolis, Ind.
Walker & Weeks, Architects, Cleveland, Ohio

DOME COVERING AND FLASHINGS
Oak Grove Mausoleum, St. Louis, Mo.
T. P. Barnett Co., Architects, St. Louis, Mo.
Sidney Lovell, Associate Architect, Chicago, Ill.



ROOFING—VALLEYS—FLASHINGS—RAIN-WATER PIPE-HEADS—PIPE—BANDS—GUTTER
Longue Vue Country Club, Pittsburgh, Pa.
Benno Janssen, Architect, Pittsburgh, Pa.

ORIEL WINDOW
Residence of Cameron Morrison, Charlotte, N. C.
Harrie T. Lindeberg, Architect, New York, N. Y.

RAIN-WATER PIPE-HEADS—PIPE—BANDS—GUTTERS
Residence of Julius Fleischmann, Allandale, Ohio
Stanley Matthews, Architect, Cincinnati, Ohio

RAIN-WATER PIPE-HEADS—PIPE—BANDS—SWAN-NECKS—GUTTERS—FERRULE PLATES
Residence of E. W. Marland, Ponca City, Okla.
John Duncan Forsyth, Architect, Tulsa, Okla.

RAIN-WATER PIPE-HEADS—PIPE—BANDS
Residence of R. T. Crane, Jr., Ipswich, Mass.
Robert Work and David Adler, Architects, Chicago, Ill.

STATUARY—RAIN-WATER PIPE-HEADS—PIPE—BANDS—SWAN-NECKS AND GUTTER
Residence of Robert Law, Port Chester, N. Y.
Dwight James Baum, Architect, Riverdale, N. Y.

RAIN-WATER PIPE-HEADS—PIPE—BANDS—GUTTER—FINIAL
E. J. Kaufmann Residence, Pittsburgh, Pa.
Benno Janssen, Architect, Pittsburgh, Pa.

RAIN-WATER PIPE HEADS—PIPE-BANDS—FLASHINGS
The Coles School, Glen Cove, L. I.—Knappe & Morris, Architects, New York, N. Y.

FLASHINGS AND CORNICE GUTTER
Emalea Pusey Warner School—Wilmington, Del.
Guilbert & Betelle, Architects, Newark, N. J.

SAWTOOTH FLASHINGS
American Enka Corporation Building, Enka, N. C.
Lockwood Greene Engineers, Inc., Architects, New York, N. Y.

FLASHINGS—CORNICE & BOX GUTTERS
Consolidated Gas Company, Hunts Point, New York
Bartlett-Hayward Co., Architects, Baltimore, Md.

Rain-water Pipe-Heads, Rain-water Pipe, Rain-water Pipe-Bands, Gutters *and* Fittings

Rain-water Pipe-Heads are made of rough cast Hoyt Hardlead.

Rain-water Pipe is manufactured in three types, rough cast, seamless and rolled sheet.

Rough Cast pipe is made from Cast Hoyt Hardlead, with a rough surface finish. Special sizes can be made from Hoyt Hardlead Cast sheets. Pipe made from Cast Hoyt Hardlead sheets has a vertical burnt seam which is placed on the back of the pipe.

Seamless pipe is made from Hoyt Hardlead and is without vertical seam. This pipe is carried in stock in sizes shown on Page 66. It can be furnished smooth or finished with a hammered or rough surface.

Rolled Sheet pipe is made of Hoyt Hardlead rolled sheet formed to shapes and sizes shown on Page 67. This pipe is furnished only in smooth finish.

Rain-water Swan-necks, Offsets and Shoes are made for all types of pipe and are finished to correspond with type of pipe.

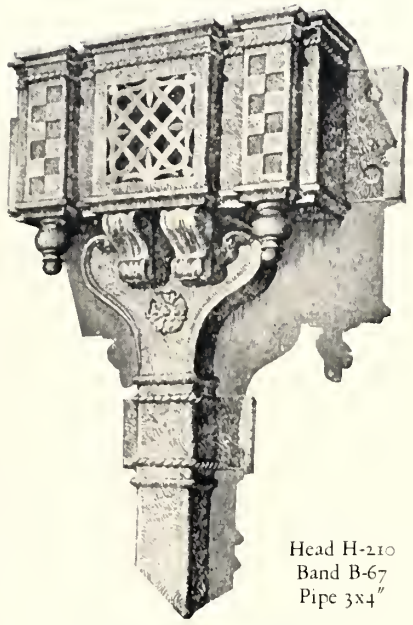
Rain-water Pipe-Bands are manufactured in several designs as illustrated and can be obtained in any design and finish. These bands are cast of Hoyt Hardlead in one piece.

Gutters are manufactured in two types, rough cast and Hoyt Hardlead rolled sheet.

Rough Cast gutter is made from Cast Hoyt Hardlead with a rough surface finish to correspond with the rough cast rain-water pipe. This type of gutter can be made to any size or shape and ornamented in accordance with architect's details.

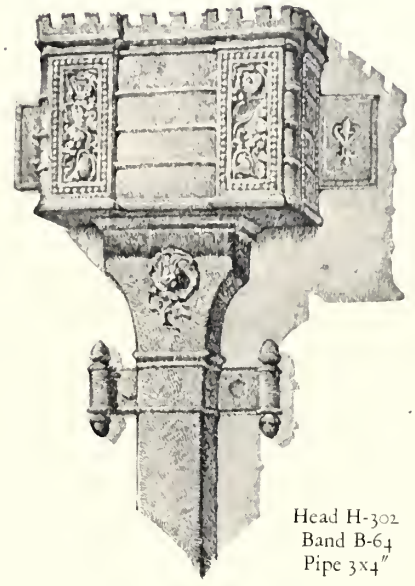
Rolled Sheet gutter is made from Hoyt-Hardlead rolled sheets in two types as illustrated on Page 71.

We are also prepared to execute Rain-water Pipe-Heads, Rain-water Pipe, Rain-water Pipe-Bands, Gutters from Architect's Special Designs.



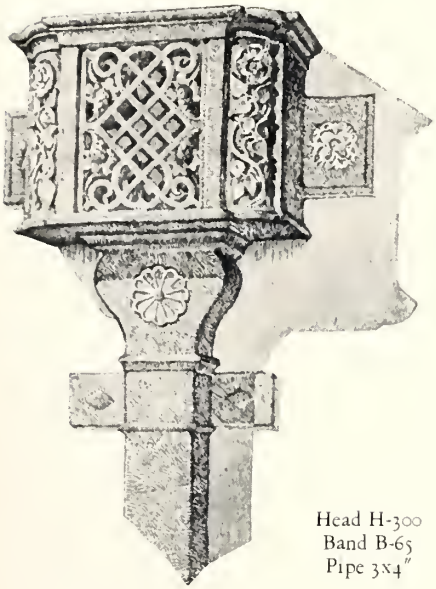
Head H-210
Band B-67
Pipe 3x4″

Approximate Dimensions
Width at Top 22⅝″
Projection 6¾″
Height 21″



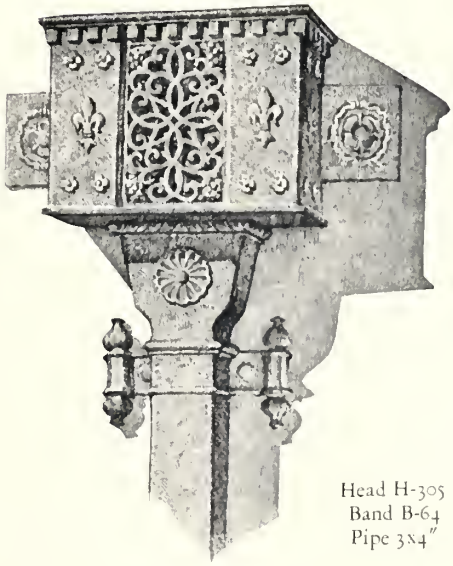
Head H-302
Band B-64
Pipe 3x4″

Approximate Dimensions
Width at Top 17¾″
Projection 8″
Height 21½″



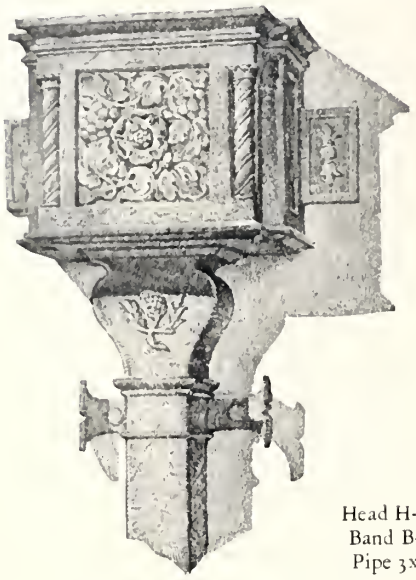
Head H-300
Band B-65
Pipe 3x4″

Approximate Dimensions
Width at Top 18¼″
Projection 10″
Height 20″



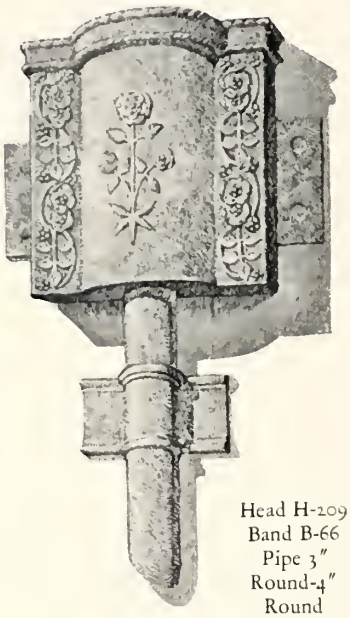
Head H-305
Band B-64
Pipe 3x4″

Approximate Dimensions
Width at Top 17¾″
Projection 7¼″
Height 21¼″



Head H-107
Band B-72
Pipe 3x4″

Approximate Dimensions
Width at Top 18⅜″
Projection 9⅜″
Height 22¾″

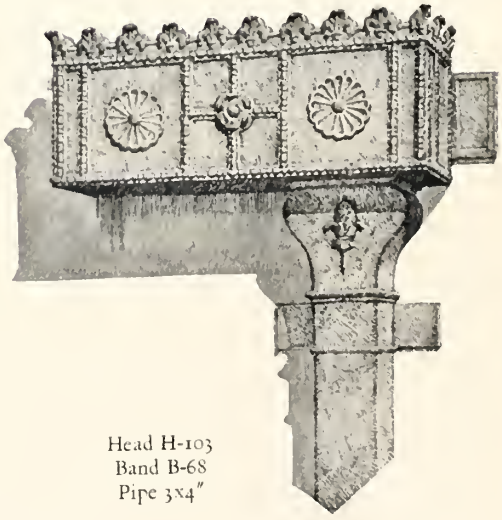


Head H-209
Band B-66
Pipe 3″
Round-4″
Round

Approximate Dimensions
Width at Top 15¼″
Projection 5¾″
Height 15″

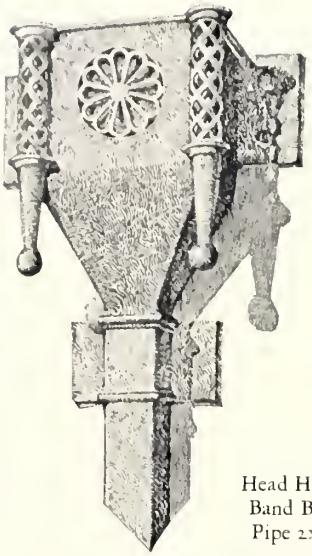
Head H-78
Band B-78
Pipe 3x4″

Approximate Dimensions
Width at Top 19¾″
Projection 9½″
Height 16½″



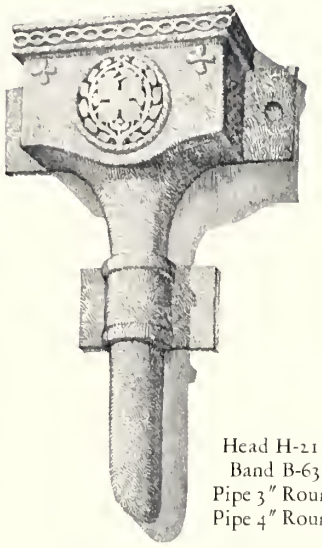
Head H-103
Band B-68
Pipe 3x4″

Approximate Dimensions
Width at Top 25″
Projection 6″
Height 17″



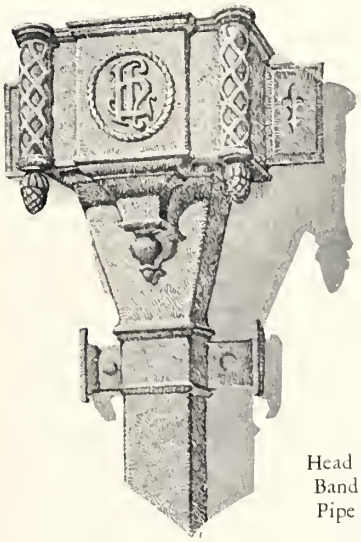
Head H-201
Band B-75
Pipe 2x3″

Approximate Dimensions
Width at Top 12¾″
Projection 7⅝″
Height 25⅝″



Head H-211
Band B-63
Pipe 3″ Round
Pipe 4″ Round

Approximate Dimensions
Width at Top 14½″
Projection 5¾″
Height 13¼″

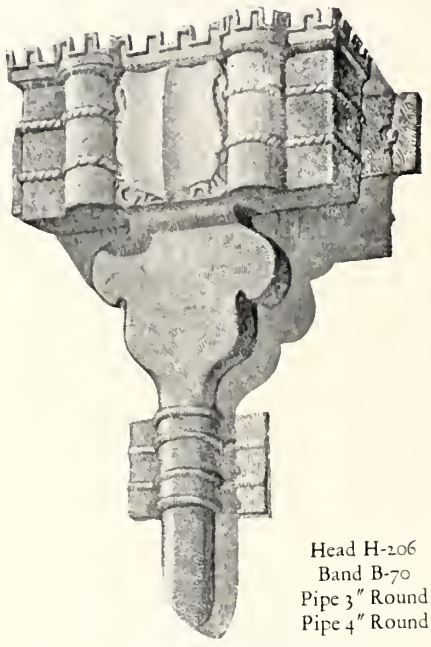


Head H-213
Band B-75
Pipe 3x4″

Approximate Dimensions
Width at Top 14½″
Projection 7¼″
Height 19″

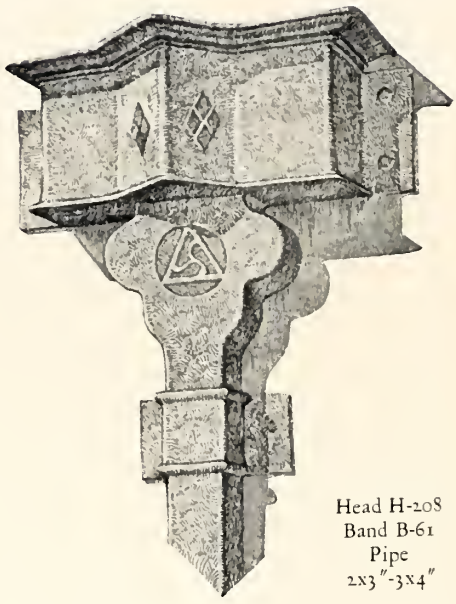
Head H-207
Band B-61
Pipe 2x3″

Approximate Dimensions
Width at Top 13¼″
Projection 5⅜″
Height 14⅝″



Head H-206
Band B-70
Pipe 3″ Round
Pipe 4″ Round

Approximate Dimensions
Width at Top 20¼″
Projection 7½″
Height 21⅜″



Head H-208
Band B-61
Pipe
2x3″-3x4″

Approximate Dimensions
Width at Top 23⅜″
Projection 9″
Height 20¼″

Head H-205
Band B-71
Pipe 2½″ Round

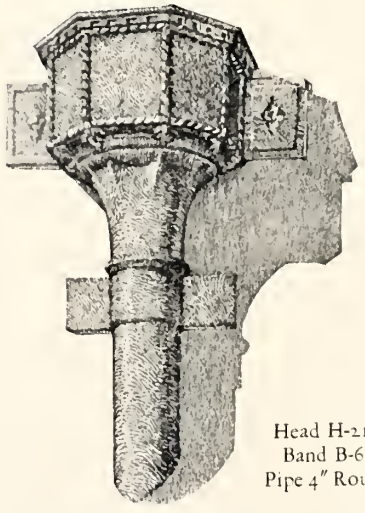
Approximate Dimensions
Width at Top 7⅛″
Projection 3⅝″
Height 9½″

Head H-205A
Band B-71
Pipe 3″ Round

Approximate Dimensions
Width at Top 8¼″
Projection 5″
Height 10″

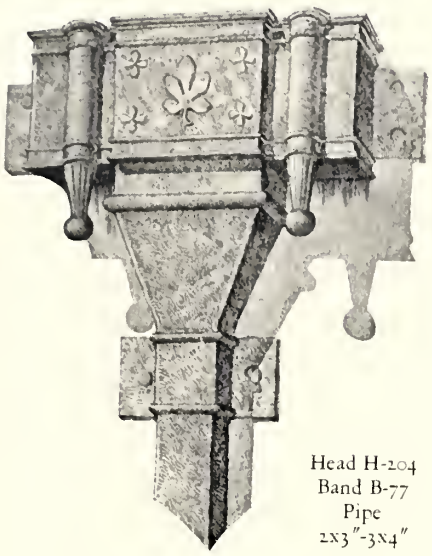
Head H-205B
Band B-71
Pipe 4″ Round

Approximate Dimensions
Width at Top 13¾″
Projection 6½″
Height 12¾″



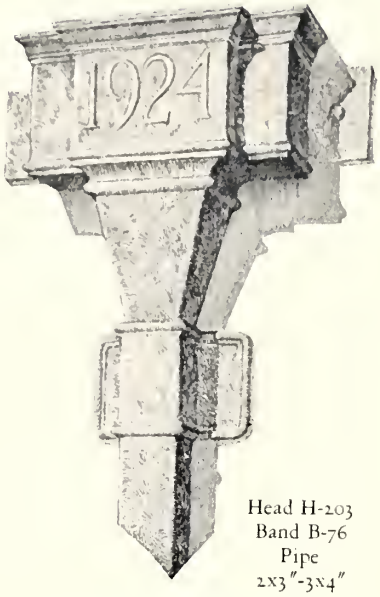
Head H-212
Band B-62
Pipe 4″ Round

Approximate Dimensions
Width at Top 13¾″
Projection 6½″
Height 17⅝″



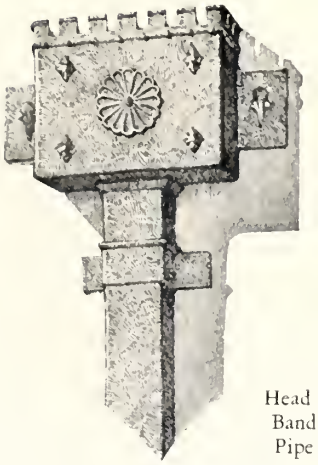
Head H-204
Band B-77
Pipe
2x3″-3x4″

Approximate Dimensions
Width at Top 20⅞″
Projection 7¼″
Height 18¾″



Head H-203
Band B-76
Pipe
2x3″-3x4″

Approximate Dimensions
Width at Top 17⅞″
Projection 7⅛″
Height 16¾″



Head H-106
Band B-69
Pipe 2x3″

Approximate Dimensions
Width at Top 12⅜″
Projection 4⅛″
Height 9½″

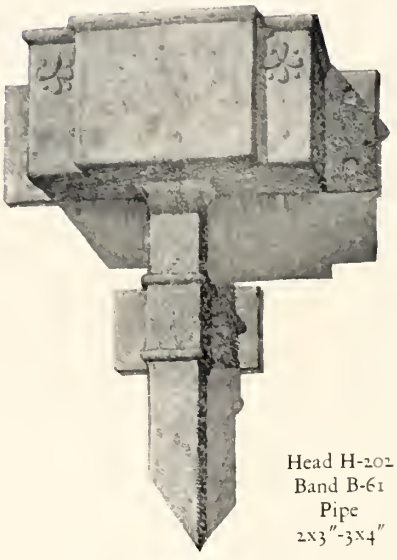
Head H-301
Band B-74
Pipe 2x3″

Approximate Dimensions
Width at Top 11½″
Projection 3″
Height 14⅝″

HOYT HARDLEAD
CAST RAIN-WATER PIPE-HEADS

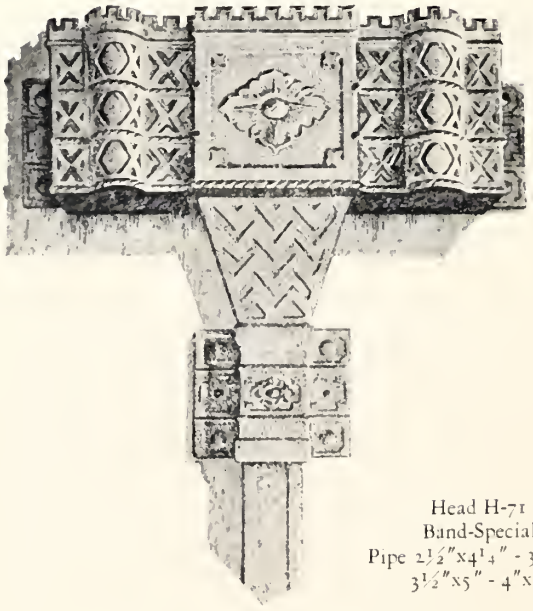
Head H-200
Band B-61
Pipe
2x3″-3x4″

Approximate Dimensions
Width at Top 14″
Projection 6″
Height 9″



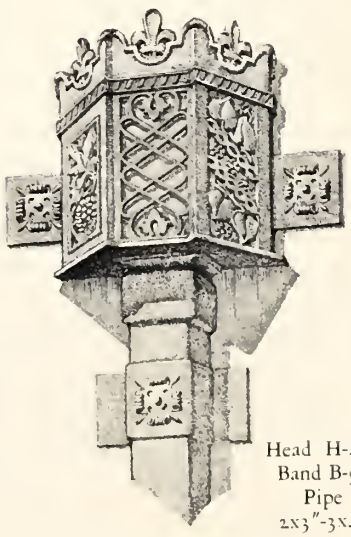
Head H-202
Band B-61
Pipe
2x3″-3x4″

Approximate Dimensions
Width at Top 17″
Projection 6½″
Height 8½″



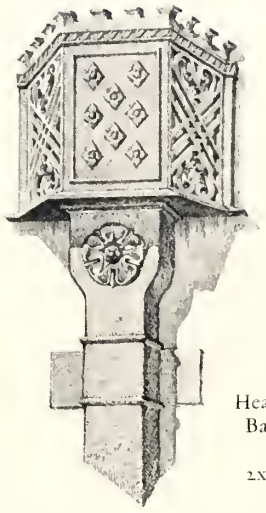
Head H-71
Band-Special
Pipe 2½″x4¼″ - 3″x4″ -
3½″x5″ - 4″x5″

Approximate Dimensions
Width at Top 36″
Projection 11″
Height 36″



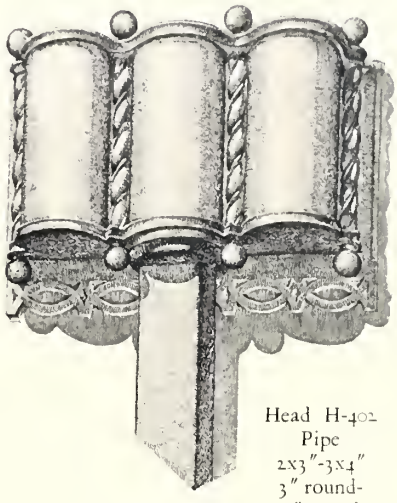
Head H-400
Band B-90
Pipe
2x3″-3x4″

Approximate Dimensions
Width at Top 15″
Projection 7½″
Height 24½″



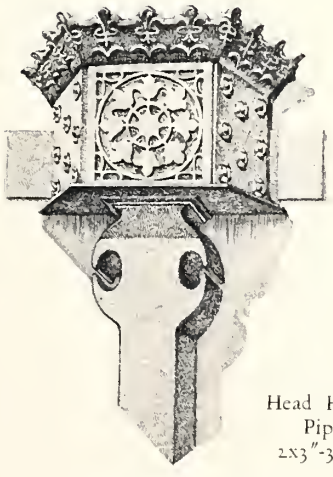
Head H-401
Band B-61
Pipe
2x3″-3x4″

Approximate Dimensions
Width at Top 13¾″
Projection 7½″
Height 19″



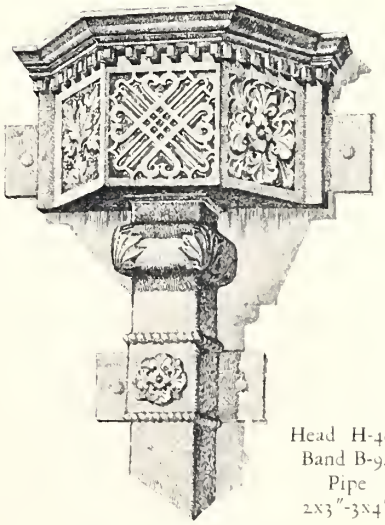
Head H-402
Pipe
2x3″-3x4″
3″ round-
4″ round

Approximate Dimensions
Width at top 26″
Projection 6½″
Height 19½″



Head H-403
Pipe
2x3″-3x4″

Approximate Dimensions
Width at Top 20″
Projection 7¾″
Height 23″



Head H-404
Band B-94
Pipe
2x3″-3x4″

Approximate Dimensions
Width at Top 23½″
Projection 8½″
Height 20″

H-60

Approximate Dimensions
Width 8″
Projection 5″
Height 7½″
Pipe 2½″x3¼″
Pipe 2½″x4¼″

H-61

Approximate Dimensions
Width 10″
Projection 6″
Height 7″
Pipe 2½″x3¼″

H-62

Approximate Dimensions
Width 8⅛″
Projection 5¼″
Height 11″
Pipe 2½″x3¼″
Pipe 2½″x4¼″
Pipe 4″ Round

H-63

Approximate Dimensions
Width 10⅞″
Projection 7¼″
Height 11½″
Pipe 2½″x3¼″
Pipe 2½″x4¼″
Pipe 3½″ Square
Pipe 4″ Round

H-68
Approximate Dimensions
Width 15¼″
Projection 7½″
Height 13½″
Pipe 3″ & 4″ Octagonal
Pipe 3″ & 4″ Round

H-65
Approximate Dimensions
Width 13″
Projection 14¾″
Height 20¼″
Pipe 2½″x4¼″

H-66
Approximate Dimensions
Width 15¾″
Projection 11″
Height 22¾″
Pipe 2½″x4¼″
Pipe 3″x4″
Pipe 4″ Octagonal
Pipe 4″ Round

H-69
Approximate Dimensions
Width 9½″
Projection 5¾″
Height 11½″
Pipe 2½″ x 4¼″

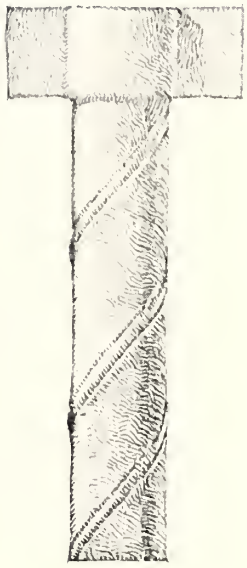
H-72
Approximate Dimensions
Width 16″
Projection 8¼″
Height 16½″
Pipe 3″ & 4″ Round

H-73
Approximate Dimensions
Width 15″
Projection 7″
Height 16½″
Pipe 2½″x4¼″
Pipe 3″x4″

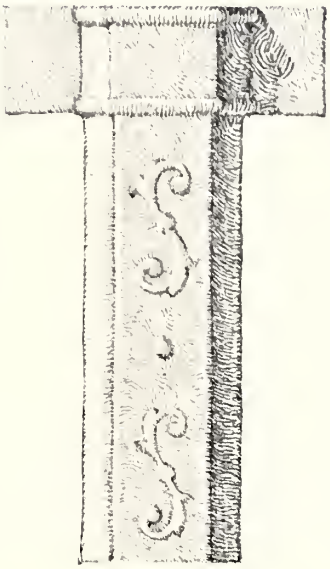
H-75
Approximate Dimensions
Width 19¾″
Projection 6¾″
Height 7¾″
Pipe 3″ & 4″ Round

H-74
Approximate Dimensions
Width 11⅜″
Projection 5⅞″
Height 13½″
Pipe 3″ & 4″ Round
Pipe 3″ & 4″ Corrugated

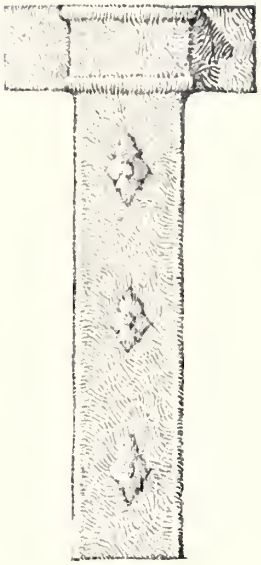
HOYT HARDLEAD
CAST ORNAMENTAL RAIN-WATER PIPE



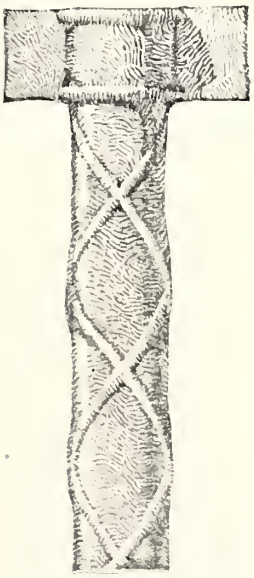
L-60



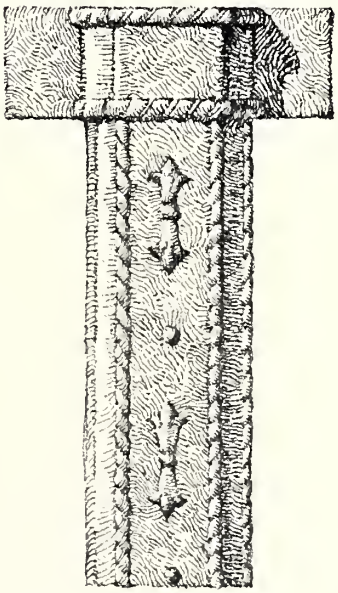
L-62



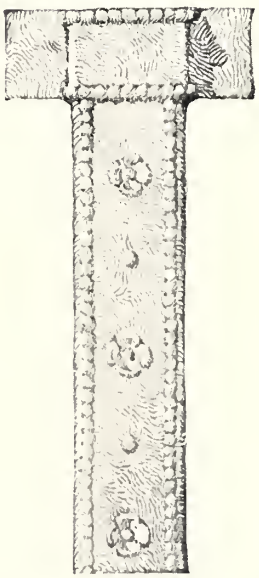
L-64



L-61



L-63



L-65

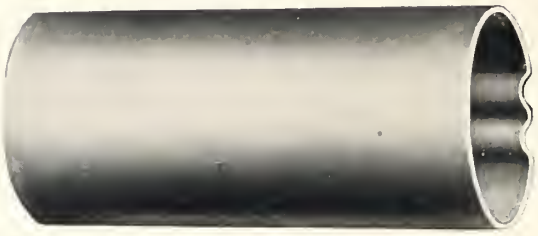
3″ Round
4″ Round

3x4″

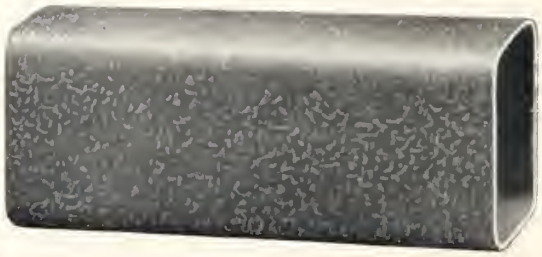
2x3″
3x4″

STANDARD LENGTH SIX FEET

HOYT HARDLEAD
SEAMLESS RAIN-WATER PIPE



3″ Round
4″ Round



2″x3″ Rectangular
2½″x3½″ Rectangular
3″x4″ Rectangular
3½″x5″ Rectangular
4½″x4½″ Square

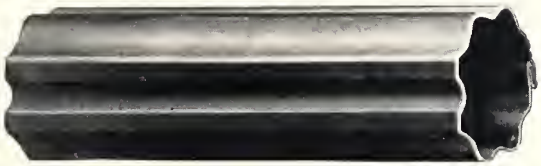
STANDARD LENGTH OF PIPE SIX FEET

HOYT HARDLEAD

ROLLED SHEET RAIN-WATER PIPE

SIZES

L-5 2″x2″
L-6 3½″x3½″
L-1 2½″x3¼″
L-2 2½″x4¼″



SIZES

L-3 3″ Diameter
L-4 4″ Diameter

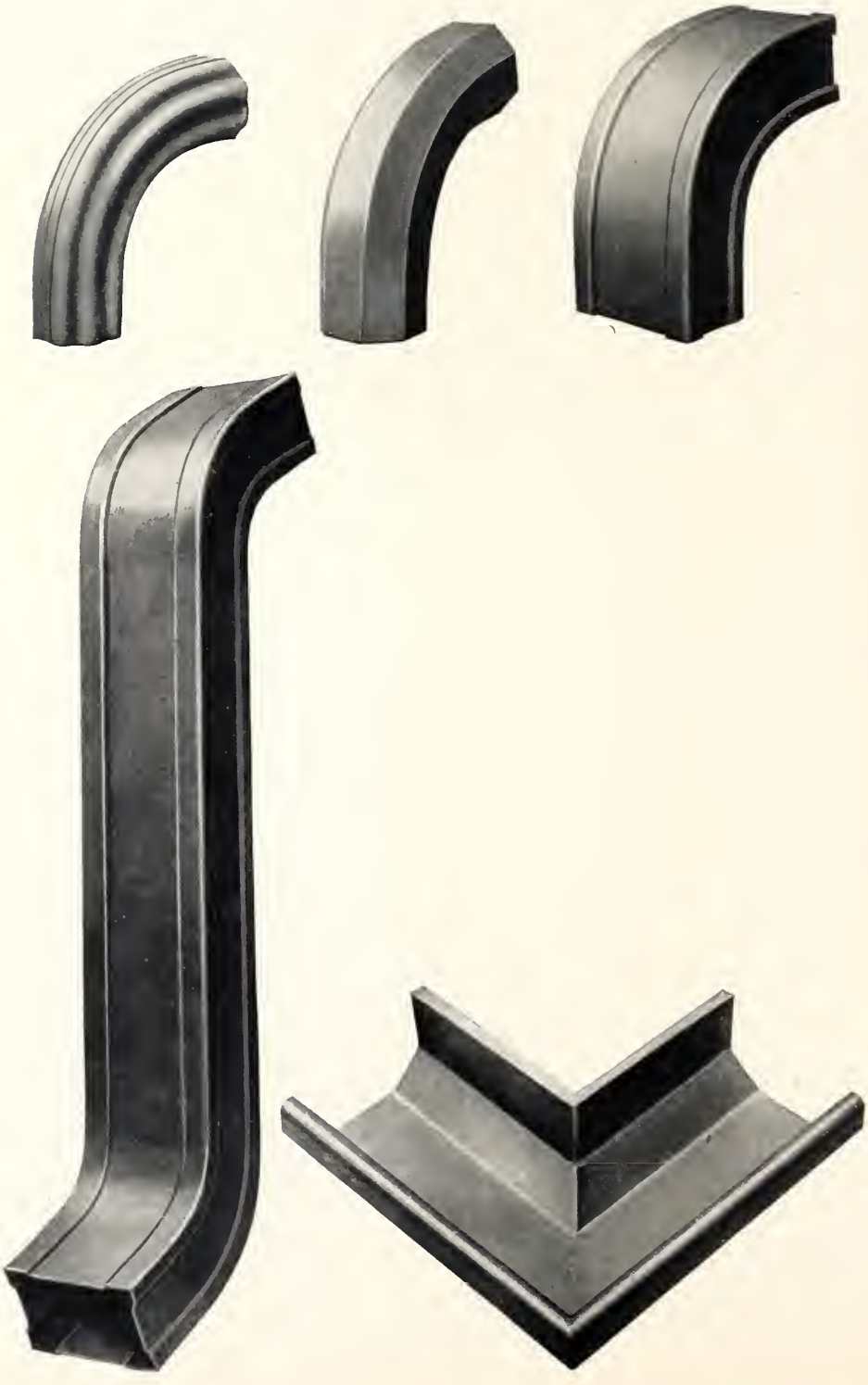
SIZES

L-8 3″ Diameter
L-9 4″ Diameter

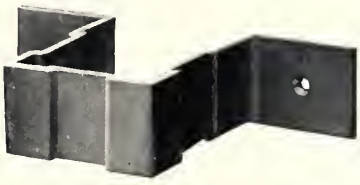
STANDARD LENGTH EIGHT FEET

HOYT HARDLEAD

SWAN-NECKS, MITERS AND ELBOWS



B-40 Pipe 2″x2″
B-41 2½″x3¼″
B-42 Pipe 2½″x4¼″



B-46 Pipe 2½″x3¼″
B-47 Pipe 2½″x4¼″

B-44 Pipe 3″ Dia., Corrugated
B-45 Pipe 4″ Dia., Corrugated

B-53 Pipe 2½″x3¼″
B-54 Pipe 2½″x4¼″
B-55 Pipe 3½″x3½″

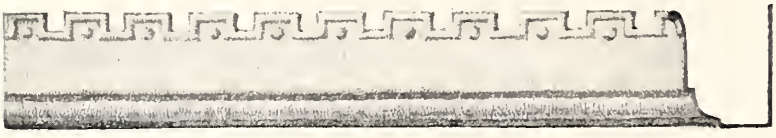
B-43 Pipe 3″ Dia., Octagon
B-57 Pipe 4″ Dia., Octagon

LEAD COATED BRASS BOLTS AND SCREWS

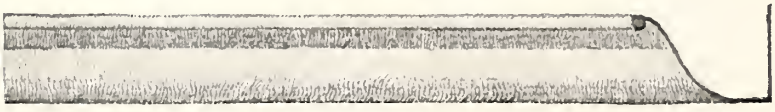
Size of Screws 1¼″-1½″-2″
Expansion Bolts ⅜″x2½″
Expansion Bolts ½″x3½″
Expansion Bolts ⅝″x4″

G-30

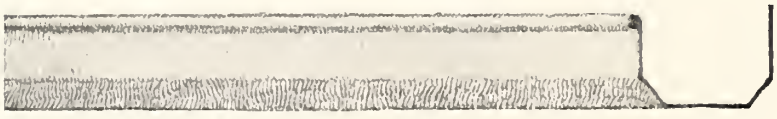
G-31



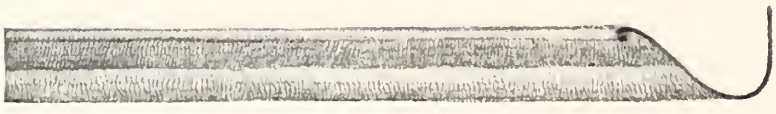
G-32



G-33



G-34



G-35

Scale Approximate: 1½″=1′

STANDARD LENGTH SIX FEET

HOYT HARDLEAD
ROLLED SHEET GUTTERS

SIZES

G-20 3″ Half Round
G-21 4″ Half Round
G-22 5″ Half Round
G-28 6″ Half Round

REINFORCED BEADED EDGE

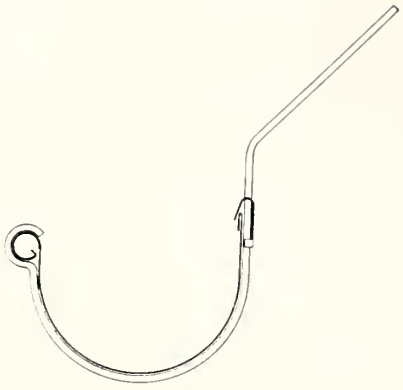
SIZES

G-26 3″ Octagonal
G-23 4″ Octagonal
G-24 5″ Octagonal
G-25 6″ Octagonal

REINFORCED BEADED EDGE

STANDARD LENGTHS EIGHT FEET

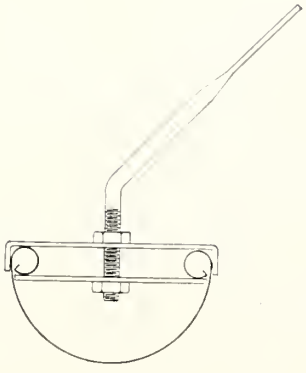
* Gutters furnished with single or double bead with bead inside or outside as desired.



Rolled Sheet Gutters. Hanger made in one piece with movable clip at back. Half-round or octagon design. Sheathing or Fascia type, as required. Furnished straight and can be bent to conform with pitch of roof.

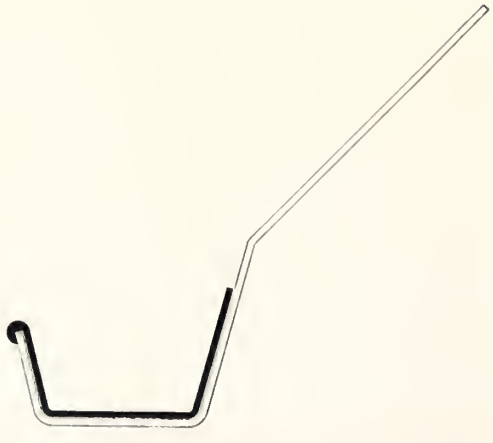
Cat. No.	Size	Style
G-H 100	3″	Half-Round
G-H 101	4″	Half-Round
G-H 102	5″	Half-Round
G-H 103	6″	Half-Round
G-H 104	3″	Octagon
G-H 105	4″	Octagon
G-H 106	5″	Octagon
G-H 107	6″	Octagon

Similar type of Hanger can be adapted for Cast Gutters, Catalogue No. G-33, 34 and 35. Shown on Plate No. 25.



Double Bead Gutters. Three-piece hanger, half-round or octagon design. This hanger can be adapted for gutters with outside bead.

Cat. No.	Size	Style
G-H 108	3″	Half-Round
G-H 109	4″	Half-Round
G-H 110	5″	Half-Round
G-H 111	6″	Half-Round
G-H 112	3″	Octagon
G-H 113	4″	Octagon
G-H 114	5″	Octagon
G-H 115	6″	Octagon



Cast Gutters. Catalogue No. G-30, 31 and 32. Shown on Plate No. 25. Furnished straight and can be bent to conform with pitch of roof.

The Genuine vs. the Substitute

The architectural profession today is trying by every method possible to get away from substitutes of any kind, to use materials, even if they have to be selected from stock, that are genuine in themselves. If I were a manufacturer I would fight every effort toward substitution that would affect my business. Let's be genuine if nothing else. Let us approach our problems always from that angle—better appearance and durability and genuineness. Those are three factors on which we should commingle. In that combination we can produce work worth while. But there is yet more.

Architecture in the past, in Greece, in Rome, in the Renaissance, was always designed in terms of the material to be used and man, who executed the work. Today, why should we not design in terms of the material to be used, man, and the machines that play such preponderating parts in modern execution? Manufacturers as well as architects must learn this lesson.

Just plain business, adding up the column, finding that your profits are a little greater this year than the year before, may be satisfaction; but it is insufficient in itself. Producers have the opportunity to get out of their business just as much pleasure and satisfaction as an artist who, sitting in the open, paints the setting sun, or a distant cloud, or a meadow, or a bit of green, who enjoys working although he can barely earn a living in the process. When manufacturers have that creative faculty and that satisfaction that comes when a man produces something beautiful—the same thing that carries on the architect and painter—achievement and happiness will follow.

Harvey Wiley Corbett, *Architect*,
New York City.

Courtesy of Southern Architect and Building News.

Specifications

HOYT HARDLEAD

It is not the purpose of these specifications to establish standard methods of solving all the problems met with in sheet metal construction but to call attention to the more important principles that govern proper installation. The most important principle to be observed in the design and installation of sheet metal is the law of expansion and contraction. All metals subjected to varying ranges of temperature will expand and contract and proper and sufficient allowance must be made for the movement of the metal. While there are several methods of successfully installing sheet metal under identical conditions the law of expansion and contraction should be observed and applied to whatever method is used.

IMPORTANT

To insure the use of proper materials, correct weights and workmanship, specify as follows:

ALL HOYT HARDLEAD SHEETS, RAIN-WATER PIPE-HEADS, RAIN-WATER PIPE, BANDS, GUTTERS, SWAN-NECKS SHALL BE MANUFACTURED BY THE HOYT HARDLEAD DIVISION, NATIONAL LEAD COMPANY, 111 BROADWAY, NEW YORK, N. Y.

Material

Hoyt Hardlead is made especially for roofing purposes and must not be confused with soft lead. It can be used for roofing, flashings, cornice coverings, gutter linings and other building purposes where it is practical to use sheet metal.

It is rolled in sheets 24″, 30″ and 36″ wide and 96″ long weighing 2½, 3, 4, 6 and 8 pounds to the square foot.

Weights to be Used. The proper weight of Hoyt Hardlead sheets depends upon the purpose for which they are to be used. For gutter linings, cornice coverings, base flashings and roofing purposes generally, the three pound sheet is recommended and for cap flashings and batten roofs where the battens are spaced 24 inches or less on centers the two and one-half pound sheet may be used.

Sizes to be Used. For cap flashings, batten caps and gutter linings the sheets can be used in eight foot lengths but for all other purposes the length of the sheets should not exceed four feet.

Care of Material. In handling HOYT HARDLEAD reasonable care should be taken not to score or bruise the metal and the use of sharp edged tools and instruments should be avoided.

In bending the metal the brake or tongs should be so adjusted as to accommodate the thickness of the metal and the bend rounded to a radius at least equal to the thickness of the metal. In no case should the bends be sharp.

Preparation of Surfaces

The surfaces upon which the metal is to be applied should be firm and smooth. The contractor should be required to examine these surfaces and be held responsible for any damage to the material or defects in the work caused by its application to improperly prepared surfaces.

Wood Surfaces. Sheathing boards should be thoroughly nailed to every bearing and the nail heads should be set. All sharp corners and projections should be planed to a smooth surface. Wood battens should be firmly secured in place and the exposed edges slightly rounded.

Concrete Surfaces. Concrete, nalecode or similar material should be screeded to a smooth surface free from depressions or projections.

Sleepers. Where the surface is of concrete, it is recommended that dovetail wood sleepers be built into the concrete at the line of all horizontal seams. This will provide means for nailing the cleats and avoid the necessity of drilling the concrete for lead shields and screws.

Felt. Sloping roofs, cornice tops and built-in gutters should be first lined with a good building felt weighing from thirty to forty pounds to the square. This precaution will take up slight inequalities in the surfaces and prevent possible puncturing of the metal.

Fastening and Supporting

While the metal should be firmly supported it should be so fastened in place with cleats that it can expand and contract without unduly straining the metal, the joints or the fastenings.

Nailing. Fastening the metal by nailing directly through the sheet should never be permitted as the movement of the metal due to expansion and contraction will either pull out the nails or tear the metal around the nail heads.

Fastening at the Seams. The sheets should be fastened at all seams by means of cleats. These cleats should be made of 16-oz. soft rolled copper or 3-pound Hoyt Hardlead, fastened to woodwork with two hard copper wire nails and to masonry with brass screws and lead shields.

The cleats should be spaced about ten inches on centers but on steep roofs continuous cleats for the horizontal joints are recommended and should be fastened every twelve inches. Turn surplus end of all cleats back to cover nail heads.

Reglets. Where the edge of the metal is fastened by means of a reglet there should be a continuous cleat of three-pound Hoyt Hardlead caulked into the reglet and the sheet should be locked to the cleat with one loop filled with an approved non-hardening compound. Never caulk the sheet into the reglet.

Unfastened Free Edges. Where the edge of the metal is unfastened, such as cap flashings and similar conditions where a lapped joint is provided, the free edge of the metal should be hemmed about one-half inch.

Nails, Screws, Etc. All nails should be hard copper wire flat head nails not less than three-quarters of an inch long. All screws should be of brass and all shields of lead. Iron or steel nails and screws, coated or uncoated, should not be used.

Joints

The sheets should be joined together by means of locked seams. Lapped and soldered seams are not recommended.

Seams. The seams should have a turnover of one and one-quarter inches and there should be a clearance between the edge of one sheet and the bend in the other of one-eighth of an inch; the seams should be neatly locked but should not be hammered down tight and with one loop filled with No. 7200 Vulcatex Non-Hardening Compound.

Soldering. Soldering should be employed for closing batten ends, joining rainwater pipe and hanging gutter.

In soldering HOYT HARDLEAD use guaranteed Fifty-Fifty Solder and Rosin as a flux. Care should be taken not to heat the soldering iron to a temperature sufficient to burn the lead.

At all points to be soldered the surface of the lead should first be lightly scraped.

Bends. All bends should be made with an easy radius and all sharp angles avoided. Where the metal turns up on a wall, curve, batten, or other vertical or sloping surface, there should be a clearance for contraction and expansion between the bend in the metal and the surface upon which it turns up of at least 3 times the thickness of the metal.

Vertical Surfaces. Where the lead is extended up on a vertical surface more than eighteen inches high, horizontal seams not more than eighteen inches apart should be provided and the sheets supported with cleats at the seams. All sheets above base flashing should be loose locked, with sheets not to exceed 18″ x 48″ or installed with standing seams using 24″ x 48″ sheets.

Gutters

Built-in Gutters. Methods of lining this type of gutter cannot be standardized to the extent of applying identical methods to all installations. The proper method to be employed depends upon the size and shape of the gutter. There are, however, a few simple rules that should be observed in the design and installation of all built-in gutters.

The gutter should be no deeper or wider than is necessary to provide proper drainage. There is nothing to be gained by excessive depth or width in a built-in gutter.

A pitch of one-half inch or more to the foot is desirable and should be provided where possible.

We recommend for built-in gutters HOYT HARDLEAD sheet weighing not less than three pounds per square foot. The sheets running parallel with the gutter should be not over eight feet in length.

All cross seams should be of loose lock type having a turnover of one and one-quarter inches and there should be a clearance between the edge of one sheet and the bend in the other of one-eighth of an inch. The seams should be neatly locked but should not be hammered down tight and one loop of the seam should be filled with Vulcatex Non-Hardening Compound No. 7200.

Hanging Gutters. Hanging gutters whether of sheet or cast HOYT HARDLEAD should be provided with expansion joints. These joints should be spaced not to exceed twenty-four feet on center. At high points in hanging gutter an efficient expansion joint may be obtained by heading the gutters over the hanger leaving a space of about one-quarter of an inch between the two heads and a cap put over the gap soldering to one head only.

Every possible precaution should be taken to provide for the movement of the metal due to expansion and contraction. Expansion joints should be provided at all high points. Metal forming the back of the gutter should be joined to the roofing or eaves flashing with a loose-locked seam at least three inches above the overflow line of the gutter and the metal forming the front of the gutter should be joined to a continuous cleat by means of a loose-locked seam with Vulcatex as described above. The metal should be fastened in place at the cross seams with cleats as previously mentioned. All sharp angles should be avoided.

It is recommended that in forming up sheets for built-in gutters that pieces of leather belting approximately 1/8" thick by 1½" wide be inserted in the turnover of locks to prevent crimping while forming.

Spandrels

Weight. Four pounds to the square foot.

Stamping. The stamping of HOYT HARDLEAD Spandrels is governed by size, design, depth of relief, etc. Spandrels 30" x 48" or smaller can usually be stamped in one piece. Spandrels of larger size are stamped in two or more sections. The method to be followed in assembling Spandrels consisting of two or more sections is to first lightly scrape the edges of all seams and the seams should be neatly soldered or burned together. The solder should be carefully scraped smooth to provide an inconspicuous joint.

Reinforcement and Installation. All Spandrels require reinforcement; such reinforcement to be burned or soldered to the Spandrels after they have been assembled.

The Spandrels should be set in place and secured to masonry or structural work by brass or copper straps. At outer edges of Spandrels where they abut the masonry the Spandrels should be led into reglets or stone joints for a distance not less than three-quarters of an inch and securely caulked with lead wool, or plugged with lead wool and caulked with an approved non-hardening compound.

Details. As conditions vary under which Spandrels are to be reinforced and installed, it is necessary Architects large scale section through Spandrel and Wall, and Elevation be furnished us in order to make specific details of installation.

Cast and Stamped Ornamental Lead Work

Cast Ornamental Lead Work—specify it to be cast of HOYT HARDLEAD and manufactured by the Hoyt Hardlead Division, National Lead Company, 111 Broadway, New York, N. Y.

Stamped Ornamental Lead Work—specify it to be stamped of Hoyt Hardlead Sheet weighing not less than four pounds to the square foot.

HOYT HARDLEAD DIVISION
OF
NATIONAL LEAD CO.
111 BROADWAY, NEW YORK, N. Y.

THE MOORE PRESS, INC.